

**REMARKS**

Upon entry of this amendment, claims 17-24, 33-40 and 46-57 are currently pending and under consideration. Claims 9-16 and 25-32 were cancelled as drawn to a non-elected invention. Claims 41-44 were cancelled to focus the invention on certain lead compounds. In cancelling the subject matter of claims 9-16, 25-32 and 41-44 from this application, applicants are not conceding the propriety of any rejection made in the November 20, 2002 Office action and applicants expressly reserve the right to pursue the remaining subject matter through one or more continuation applications.

All amendments made herein to the pending claims are being presented to address matters of form. Formal amendments are made to (i) insert the word "and" after the penultimate variable definition in claims 17-23 and 33-39, (ii) change the capitalization of the word "Claim" to read "claim" in claims 18-23, 34-39, and 46-57, (iii) replace the structure of  $Y^0$  in claims 17, 20, 33, and 36 in order to depict that the variable  $K^2$  is carbon, (iv) combine the definitions of  $R^{16}$ - $R^{19}$  (as in the originally presented claims) and cancel the second (optional) definition of  $R^{16}$  and  $R^{19}$  in claims 17, 18, 20, 33, 34, and 36, (v) cancel the second (optional) definition of  $R^{16}$  and  $R^{19}$  in claims 19, 22, and 35, (vi) remove redundant language from the definition of  $Q^b$  in claims 17-20, 22, and 33-36, (vii) cancel the proviso in the definition of  $Q^b$  in claims 21, 37, and 38 as redundant because  $Q^b$  is always bonded to a carbon in these claims, (viii) amend claims 24 and 40 for improved readability, (ix) cancel the definitions of  $R^1$  and  $R^2$  in claim 36 since these variables do not appear in the claimed structure, (x) amend the definition  $Q$  or  $R^2$  in claims 17, 18, 20, and 21 to adopt more formal nomenclature as more fully discussed below,<sup>1</sup> and (xi) and replace the nomenclature for  $Y^0$  in claims 18, 19, 21, 22, 34, and 35 with the corresponding structures as more fully discussed below.

In claims 17, 18, 20, and 21 the definitions of  $Q$  or  $R^2$  were refined to further clarify that the substituents thereof (*i.e.*,  $R^9$ - $R^{13}$ ) may be present when  $Q$  or  $R^2$  represents an aryl or heteroaryl. These substituents are present on ring carbon atoms (since ring heteroatoms of a heteroaryl ring can't be substituted). Support for the amendments to  $Q/R^2$  in claims 17, 18, 20, and 21 can be found in the claims as

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<sup>1</sup>The designation of  $R^2$  is used in place of  $Q$  in claim 21 ( $Q$  becomes  $R^2$  when  $Z^0$  is a bond).

originally presented and the specification. As originally presented, claims 17, 18, 20, and 21 included the following phrases in the definition of Q or R<sup>2</sup>: "...the other carbon adjacent to the carbon at the point of attachment...", "a carbon adjacent to R<sup>9</sup> and two atoms from the carbon at the point of attachment...", and "a carbon adjacent to R<sup>13</sup> and two atoms from the point of attachment..." Support for the refinement of the definition of Q or R<sup>2</sup> can also be found in the dependent claims. For example, in claim 19, which depends from claim 18, Q is defined as specific substituted or unsubstituted aryl or heteroaryl moieties (*i.e.*, 5-amino-3-amidocarbonylphenyl, 3-pyridyl, 5-amino-3-thienyl, etc.). None of the substituents are present at a ring heteroatom, but instead are present only at ring carbon atoms. Further support for the refinement of Q or R<sup>2</sup> in claims 17, 18, 20, and 21 can be found in the specification at page 12, lines 8-18 wherein Q is formula (II). It should be noted that the ring substituents for Q recited in formula II (R<sup>9</sup>-R<sup>13</sup>) are "each independently selected to maintain the tetravalent nature of carbon, trivalent nature of nitrogen, the divalent nature of sulfur, and the divalent nature of oxygen."<sup>2</sup> In order to fulfill this requirement and maintain an aromatic or heteroaromatic ring system, no substitution at a heteroatom is allowable. This amendment does not alter the scope of the claims, but adopts more formal nomenclature to specify, by ring position, the substituent which may be present when the ring position is occupied by a carbon (since the heteroatoms of heteroaryls are not substituted), thereby obviating any conceivable misinterpretation.

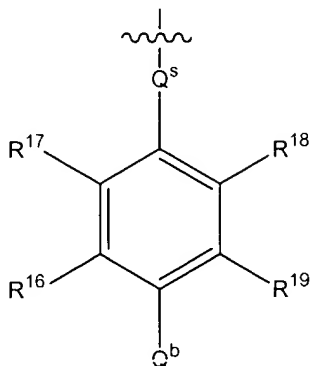
Support for the amendments to Y<sup>0</sup> in claims 18, 19, 21, 22, 34, and 35 can be found in the claims as originally presented and in the specification. In claim 18, for example, Y<sup>0</sup> is defined to include "1-Q<sup>b</sup>-4-Q<sup>s</sup>-2-R<sup>16</sup>-3-R<sup>17</sup>-5-R<sup>18</sup>-6-R<sup>19</sup>benzene."<sup>3</sup> To avoid any possibility of misinterpretation, applicants have amended these claims to recite the actual structure represented by the originally presented nomenclature. For

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<sup>2</sup>Specification at p. 12, lines 16-18.

<sup>3</sup>Y<sup>0</sup> is defined in originally presented claim 18 as follows: "Y<sup>0</sup> is selected from the group consisting of: 1-Q<sup>b</sup>-4-Q<sup>s</sup>-2-R<sup>16</sup>-3-R<sup>17</sup>-5-R<sup>18</sup>-6-R<sup>19</sup>benzene, 2-Q<sup>b</sup>-5-Q<sup>s</sup>-6-R<sup>17</sup>-4-R<sup>18</sup>-2-R<sup>19</sup>pyridine, 3-Q<sup>b</sup>-6-Q<sup>s</sup>-2-R<sup>16</sup>-5-R<sup>18</sup>-4-R<sup>19</sup>pyridine, 2-Q<sup>b</sup>-4-Q<sup>s</sup>-3-R<sup>16</sup>-6-R<sup>18</sup>pyrazine, 3-Q<sup>b</sup>-6-Q<sup>s</sup>-2-R<sup>18</sup>-5-R<sup>19</sup>-4-R<sup>19</sup>pyridazine, 2-Q<sup>b</sup>-5-Q<sup>s</sup>-6-R<sup>17</sup>-4-R<sup>18</sup>pyrimidine, 5-Q<sup>b</sup>-2-Q<sup>s</sup>-3-R<sup>16</sup>-6-R<sup>19</sup>pyrimidine, 3-Q<sup>b</sup>-5-Q<sup>s</sup>-4-R<sup>16</sup>-2-R<sup>19</sup>thiophene, 2-Q<sup>b</sup>-5-Q<sup>s</sup>-3-R<sup>16</sup>-4-R<sup>17</sup>thiophene, 3-Q<sup>b</sup>-5-Q<sup>s</sup>-4-R<sup>16</sup>-2-R<sup>19</sup>furan, 2-Q<sup>b</sup>-5-Q<sup>s</sup>-3-R<sup>16</sup>-4-R<sup>17</sup>furan, 3-Q<sup>b</sup>-5-Q<sup>s</sup>-4-R<sup>16</sup>-2-R<sup>19</sup>pyrrole, 2-Q<sup>b</sup>-5-Q<sup>s</sup>-3-R<sup>16</sup>-4-R<sup>17</sup>pyrrole, 4-Q<sup>b</sup>-2-Q<sup>s</sup>-5-R<sup>19</sup>imidazole, 2-Q<sup>b</sup>-4-Q<sup>s</sup>-5-R<sup>17</sup>imidazole, 3-Q<sup>b</sup>-5-Q<sup>s</sup>-4-R<sup>16</sup>isoxazole, 5-Q<sup>b</sup>-3-Q<sup>s</sup>-4-R<sup>16</sup>isoxazole, 2-Q<sup>b</sup>-5-Q<sup>s</sup>-4-R<sup>16</sup>pyrazole, 4-Q<sup>b</sup>-2-Q<sup>s</sup>-5-R<sup>19</sup>thiazole, and 2-Q<sup>b</sup>-5-Q<sup>s</sup>-4-R<sup>17</sup>thiazole."

example, "1- $Q^b$ -4- $Q^s$ -2- $R^{16}$ -3- $R^{17}$ -5- $R^{18}$ -6- $R^{19}$ benzene" has been replaced with the following formula:



With the exception of the bond-line extending from  $Q^s$ , all of the structures presented in amended claims 18, 19, 21, 22, 34, and 35 can be found in the specification at pages 83-85.<sup>4</sup> Like the amendments to  $Q$  and  $R^2$  above, this amendment does not alter the scope of the claims, but adopts more formal nomenclature to specify, by ring position, the substituent which may be present when the ring position is occupied by a carbon (since the heteroatoms of heteroaryls are not substituted), thereby obviating any conceivable misinterpretation.

#### I. Rejections Based on 35 U.S.C. §112, Second Paragraph

Applicants respectfully request reconsideration of the rejection of claims 9-16 and 25-32 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, the Office states that claims 9-16 and 25-32 are drawn to a non-elected invention. In response, claims 9-16 and 25-32 have been cancelled thus rendering moot this rejection.

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<sup>4</sup>The bond-line extending from  $Q^s$  illustrates that  $Q^s$  serves as the point of attachment for  $Y^0$  to the remainder of the molecule.

## **II. Provisional Rejection Based on Nonstatutory Double Patenting**

Applicants respectfully request reconsideration of the provisional rejection of claims 17-24 and 41-44 under the judicially created doctrine of obviousness-type double patenting over claims 62-97 of copending application no. 09/716,962. If deemed appropriate, applicants will file a terminal disclaimer in this case or copending application No. 09/716,962 upon issuance of a patent in either case.

## **III. Objection Based on Claims Dependent upon Rejected Base Claims**

Applicants respectfully request reconsideration of the objection to claims 46-57 as being dependent upon a rejected base claim. As amended by Amendment A and Response<sup>5</sup>, claim 46 is dependent upon claims 24 or 40. As amended herein, claim 47 is dependent upon any of claims 17-23 or 33-39 (claims 41-44 are cancelled). Further, claims 48-56 are dependent upon claims 46 or 47, while claim 57, as amended, is dependent upon any one of claims 17-24 or 33-40. Claims 33-40 were allowed in the present Office action, Paper No. 13. Additionally, claims 17-24 are allowable for the reasons stated in Section II above. Thus, claims 46-57 are not dependent upon any rejected base claims.

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<sup>5</sup>Amendment A and Response filed July 1, 2002.

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**CONCLUSION**

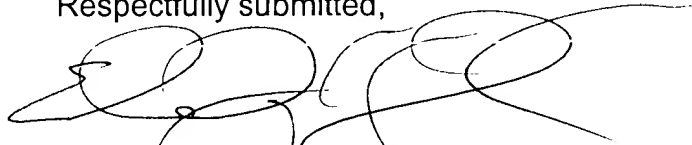
In light of the foregoing, Applicants request entry of the claim amendments, withdrawal of all claim rejections, and solicit allowance of the claims. The Examiner is invited to contact the undersigned attorney should any issue remain unresolved.

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Enclosed is applicants' check in the amount of \$410 for payment of the surcharge, filing fee and two month extension of time.

Further, the Commissioner is hereby authorized to charge any under payment or credit any over payment to Deposit Account No. 19-1345.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'EJH', with a long horizontal flourish extending to the right.

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